REMARKS

Re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant and consistent with 37 C.F.R. § 1.116 and in light of the remarks which follow are respectfully requested.

Claims 1-11, 13-18 and 20 are pending in the application and under consideration, as claims 12 and 19 have been previously canceled.

Claim Rejection* - 35 *USC* § *112, First Paragraph

Claims 1-11, 13-18 and stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement, purportedly for not having explicit support in the original disclosure on the coefficient of thermal expansion , a feature introduced in the previous amendment. This position is improper for the following reasons.

As set forth in MPEP §2163.04, a description as filed is presumed to be adequate, unless and until sufficient evidence or reasons to the contrary has been presented by the Examiner to rebut the presumption. See *In re Marzocchi*, 439 F.2d 220, 224 (CCPA 1971). The Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d, 257, 263.

Here, the materials of the target and the backing plate are clearly and explicitly disclosed in applicants' specification. Moreover, the coefficient of thermal expansion for these materials are known to those skilled in the art as substantiated in the applicants' submission with the amendment of May 21, 2010. Thus, the record taken as whole, clearly demonstrates that the written description requirement is provided, and the burden of proof has not been met. Withdrawal of this rejection is respectfully requested.

Claim Rejection - 35 USC § 112, Second Paragraph

Claims 1-11, 13-18 and stand rejected under 35 U.S.C. §112, second paragraph, for failing to point out and distinctly claim the subject matter which applicant regards as the invention because the term "similar" is allegedly indefinite for not providing the requisite degree of similarity. This position is improper, as the degree of similarity between the coefficients of thermal expansion has been demonstrated in applicants' submission of May 21, 2010 as having overlapping ranges. Thus, one of ordinary skill in the art would be apprized by the meaning of the term "similar" in this context. Accordingly, withdrawal of this rejection is requested.

Claim Rejections - 35 USC § 103

Claims 1-11, 13-18 and 20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Ogata et al. (Japanese Patent Document No. 02043362 A) and applicants alleged admitted prior art in view of Shindo et al. (U.S. Patent No. 6,485,542 B2)[1]. The claims, cannot be rejected over these documents for the following reasons.

The present invention relates to a method of bonding a sputter target to a backing plate, and more specifically, the use of a backing plate having spaced-apart ridges on the bonding surface of the backing plate.

In accordance with one aspect of the invention, and as set forth in independent claim 1, a method for forming a solder bonded sputter target/backing plate assembly is provided. The method includes (a) forming a backing plate with a bonding surface having a plurality of segmented and spaced-apart ridges that are machined and disposed on and within the periphery of the bonding surface of the backing plate, which perform as spacers/standoffs for the supply of solder material between said backing plate and a sputter target; (b) forming the sputter target from a ferromagnetic material and having a sputtering surface and substantially flat

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[1] Corresponds to U.S. Patent Publication No. 2001/0032686 A1, cited in the Official Action

bonding surface, and wherein the backing plate and the sputter target have similar coefficients of thermal expansion; (c) applying the solder material to the interface spaces defined by superimposing the sputter target within the periphery of and onto the plurality of ridges on the backing plate; and (d) allowing the solder material to solidify and bond the sputter target to the backing plate so that the plurality of ridges provide an effective uniform thickness solder bonded interface.

Ogata et al. pertains to a method of joining a sputter target and a backing plate by a brazing material. Ogata et al., however, does not disclose the features of the present invention. For example, Ogata et al does not concern the uniform thickness of a target assembly in order to achieve optimal thickness and sheet resistance uniformity of sputtered films. In this regard, the presently claimed invention recites the spaced apart ridges machined into the backing plate and segmented to accommodate the solder supplied between the backing plate and the sputter target which is made of ferromagnetic materials. Thus, the sputtering target and the backing plate have similar coefficients of thermal expansion, and the ridges act as spacers to ensure a substantially uniform solder thickness. By comparison, Ogata et al. simply provides channels (e.g., grooves or slots) in the bonding surface of the backing plate, which appear to extend over the entire surface of the backing plate for the purpose of minimizing warping that occurs during bonding of materials having a large difference in thermal expansion.

The Examiner simply takes the position that the ridges of Ogata et al., inherently act as spacers/standoffs for the supply of solder. See page 7 of the Official Action. This position is improper. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). Therefore, a *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best* 562 F2d 1252, 1255.

First, and foremost the Ogata et al. does not even recognize the issue which the present invention address. Ogata et al. concerns warpage of the target

assembly, not spacers which affect the uniformity of the bond between materials having similar thermal expansion. In this regard, the Examiner's attention is drawn to the materials bonded in Ogata et al. They are rare earth materials bonded to copper. These materials have a large difference in thermal expansion, and the bonding would create warping, but for the channels formed in the backing plate. By comparison, in the present invention it is a solder material which unites the backing plate and the sputtering target (e.g., materials having a similar thermal expansion) and leads to the use of an effective uniform thickness solder bonded interface.

Clearly, Ogata et al. does not disclose raised protrusions in the form of segmented space-apart ridges on the bonding surface of the backing plate to accommodate the solder and provide a uniform thickness interface. Neither the structure nor the processes of making the structure are the same as those suggested by Ogata et al.

The alleged admitted prior art has been applied for teaching machining of grooves. Nonetheless, the alleged admitted prior art does not cure the deficiencies discussed in Ogata et al. nor would it be combined with the teachings of Ogata et al., but for the teaching in the present application.

Shindo et al. relates to Ni-Fe sputtering targets for forming magnetic thin films, and specifically to a Ni-Fe sputtering target for forming ferromagnetic thin films. Col. 1, lns. 15-18. Shindo et al. has been applied for purportedly disclosing soldering the backing plate and the target with In-Sn solder. Official Action at page 7. However, Shindo et al. does not disclose or suggest the features lacking in either Ogata et al. the alleged admitted prior art taken alone or together. Thus, even if combined in the manner suggested, one of ordinary skill in the art would not arrive at the presently claimed invention.

Accordingly, the target assembly and the method of manufacturing same in in the applied art is different from the present invention. For the foregoing reasons withdrawal of this rejection is in order, and it is respectfully requested.

CONCLUSION

On the basis of the foregoing amendment and response, Applicants respectfully submit that the claims are in condition for allowance. Favorable action on the merits is respectfully requested. If there are any questions regarding this response, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Applicants believe that this response is timely and that no further fees are due with this response. However, in the event that a fee or credit is owed or due, the Commissioner is authorized to charge or credit any deficiency/overpayment to Deposit Account No. 16-2440.

Respectfully submitted,

Iurie A. Schwartz, Reg. No. 43,909
Attorney for Applicants

Praxair, Inc.
Corporate Law Department
39 Old Ridgebury Road
Danbury, CT 06810-5113
Phone: (203) 837-2115
Fax: (203) 837-2545

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